

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please AMEND claims 76-80, 83, 84, 88-92, 96-99, 101, 105-108, 110, 112, 115, 118-122, 125, 129, 131, and 136-148, in accordance with the following:

76. (CURRENTLY AMENDED) An authentication apparatus comprising:
a touch sensor ~~detecting~~ configured to detect a plurality of coordinates, input via a specifying member which is placed on the touch sensor and specifies a plurality of discontinuous different coordinates;

a comparing unit ~~comparing~~ configured to compare the plurality of detected coordinates and a plurality of registered coordinates and ~~outputting~~ to output a compared result; and

an authentication unit ~~carrying~~ configured to carry out an authentication based on the compared result.

77. (CURRENTLY AMENDED) An authentication apparatus, comprising:
a touch sensor ~~detecting~~ configured to detect a plurality of coordinates, input by a pointing device, via a specifying member which is placed on the touch sensor and specifies a plurality of discontinuous different coordinates;

a comparing unit ~~comparing~~ configured to compare the plurality of the detected coordinates and a plurality of registered coordinates and ~~outputting~~ to output a compared result; and

an authentication unit ~~carrying~~ configured to carry out an authentication based on the compared result.

78. (CURRENTLY AMENDED) The authentication apparatus as claimed in claim 76, wherein said specifying member specifies the plurality of discontinuous different coordinates by a plurality of discontinuous holes or openings, cutouts or marks.

79. (CURRENTLY AMENDED) The authentication apparatus as claimed in claim 76,

which further comprises:

a judging unit judging configured to judge an end of the input of the plurality of detected coordinates when an input interval of the plurality of detected coordinates is longer than a predetermined interval or the input interval of the plurality of detected coordinates is longer than an average value of the input interval.

80. (CURRENTLY AMENDED) The authentication apparatus as claimed in claim 76, wherein the specifying member is placed on a specified region of the touch sensor.

81. (ORIGINAL) The authentication apparatus as claimed in claim 78, wherein the holes or openings, cutouts or marks of said specifying member are provided at arbitrary positions.

82. (ORIGINAL) The authentication apparatus as claimed in claim 76, wherein the specifying member is placed in a specified region which is arbitrarily movable on said touch sensor.

83. (CURRENTLY AMENDED) The authentication apparatus as claimed in claim 76, which further comprises:

a registering unit registering configured to register user levels and a manager level which is common to all of the user levels, with respect to the plurality of registered coordinates, registered coordinate patterns or registered code values.

84. (CURRENTLY AMENDED) The authentication apparatus as claimed in claim 76, wherein said comparing unit includes a unit part obtaining configured to obtain the plurality of registered coordinates from positions and registered patterns, specified by one or more arbitrary ones of the detected coordinates.

85. (ORIGINAL) The authentication apparatus as claimed in claim 76, wherein said touch sensor virtually sets a keyboard at a position indicated by one or a plurality of arbitrary inputs via the specifying member which is placed on said touch sensor and specifies the plurality of discontinuous different coordinates, and detects a code corresponding to each key located at a position where the one or plurality of arbitrary inputs are made based on the virtually set

keyboard, and said comparing unit compares each detected code with registered codes.

86. (ORIGINAL) The authentication apparatus as claimed in claim 76, wherein said touch sensor detects resistances corresponding to the coordinates input from a resistor layer type touch sensor via the specifying member, and said comparing unit compares the plurality of detected coordinates and the registered coordinates by comparing the detected resistances and registered resistances.

87. (ORIGINAL) The authentication apparatus as claimed in claim 76, wherein said touch sensor is provided in display means.

88. (CURRENTLY AMENDED) A user authentication method comprising:
~~a detecting step~~ detecting a plurality of coordinates, input via a specifying member which is placed on a touch sensor and specifies a plurality of discontinuous different coordinates;
~~a comparing step~~ comparing the plurality of the detected coordinates and a plurality of registered coordinates and outputting a compared result; and
~~an authentication step~~ carrying out an authentication based on the compared result.

89. (CURRENTLY AMENDED) A user authentication method comprising:
~~a detecting step~~ detecting a plurality of coordinates, input by a pointing device via a specifying member which is placed on a touch sensor and specifies a plurality of discontinuous different coordinates;
~~a comparing step~~ comparing the plurality of the detected coordinates and a plurality of registered coordinates and outputting a compared result; and
~~an authentication step~~ carrying out an authentication based on the compared result.

90. (CURRENTLY AMENDED) The user authentication method as claimed in claim 88, wherein said member specifies the plurality of discontinuous different coordinates by a plurality of discontinuous holes or openings, cutouts or marks.

91. (CURRENTLY AMENDED) The user authentication method as claimed in claim 88, wherein said carrying out of said authentication step compares an order of the plurality of detected coordinates and an order of the plurality of registered coordinates and carries out the

authentication based on a compared result of the orders.

92. (CURRENTLY AMENDED) The user authentication method as claimed in claim 88, which further comprises:

~~a judging step-judging an end of the input of the plurality of detected coordinates when an input interval of the plurality of detected coordinates is longer than a predetermined interval or, the input interval of the plurality of detected coordinates is longer than an average value of the input interval.~~

93. (ORIGINAL) The user authentication method as claimed in claim 88, wherein said specifying member is placed on a specified region on said touch sensor.

94. (ORIGINAL) The user authentication method as claimed in claim 90, wherein the holes or openings, cutouts or marks of the specifying member are provided at arbitrary positions.

95. (ORIGINAL) The user authentication method as claimed in claim 88, wherein the specifying member is placed in a specified region which is arbitrarily movable on ~~a-the~~ touch sensor.

96. (CURRENTLY AMENDED) The user authentication method as claimed in claim 88, which further comprises:

~~a registering step-registering user levels and a manager level which is common to all of the user levels, with respect to the plurality of registered coordinates, registered coordinate patterns or registered code values.~~

97. (CURRENTLY AMENDED) The user authentication method as claimed in claim 88, wherein said comparing step-obtains the plurality of registered coordinates from positions and registered patterns specified by one or more arbitrary ones of the detected coordinates.

98. (CURRENTLY AMENDED) The user authentication method as claimed in claim 88, wherein said detecting step-virtually sets a keyboard at a position indicated by one or a plurality of arbitrary inputs via the specifying member which is placed on ~~a-the~~ touch sensor and

specifies the plurality of discontinuous different coordinates, and detects a code corresponding to each key located at a position where the one or plurality of arbitrary inputs are made based on the virtually set keyboard, and said comparing step-compares each detected code with registered codes.

99. (CURRENTLY AMENDED) The user authentication method as claimed in claim 88, wherein said detecting step-detects resistances corresponding to the coordinates input from a resistor layer type touch sensor via the specifying member, and said comparing step-compares the plurality of detected coordinates and the registered coordinates by comparing the detected resistances and registered resistances.

100. (ORIGINAL) The user authentication method as claimed in claim 88, wherein a touch sensor is provided in a display unit.

101. (CURRENTLY AMENDED) An apparatus, comprising:
a touch sensor;
a user authentication card which is placed on the touch sensor when ~~making an input~~
~~inputting a plurality of discontinuous different coordinates~~ for user authentication, wherein
the user authentication card comprises:

a plurality of perforated parts,
each of perforated parts removed by punching forming a hole which is used when
~~making an input to the coordinate detector~~
~~inputting the plurality of discontinuous different coordinates to the touch sensor.~~

102. (ORIGINAL) The apparatus as claimed in claim 101, wherein the user authentication card further comprises:

a direction specifying unit provided at asymmetrical positions with respect to top and bottom, and right and left of the card,
said direction specifying unit being formed by at least one of a hole or opening, a cutout, a change in geometrical configuration, and a printed mark.

103. (ORIGINAL) The apparatus as claimed in claim 101, wherein said card is made of a transparent member or a non-transparent member.

104. (ORIGINAL) The apparatus as claimed in claim 101, wherein said card has a shape and size approximately identical to those of a credit card.

105. (CURRENTLY AMENDED) A computer readable storage medium storing a program to make a computer perform an authentication by:

detecting a plurality of coordinates, input via a specifying member which is placed on a touch sensor and specifies a plurality of discontinuous different coordinates;

comparing the plurality of the detected coordinates and a plurality of registered coordinates and outputting a compared result; and

authenticating based on the compared result.

106. (CURRENTLY AMENDED) A computer readable storage medium storing a program to make a computer perform an authentication by:

detecting a plurality of coordinates, input by a pen, via a specifying member which is placed on a touch sensor and specifies a plurality of discontinuous different coordinates;

comparing the plurality of the detected coordinates and a plurality of registered coordinates and outputting a compared result; and

authenticating based on the compared result.

107. (CURRENTLY AMENDED) The storage medium as claimed in claim 105, wherein said specifying member specifies the plurality of discontinuous different coordinates by a plurality of discontinuous holes or openings, cutouts or marks.

108. (CURRENTLY AMENDED) The storage medium as claimed in claim 105, wherein said authentication means authenticating makes the computer compare an order of the plurality of detected coordinates and an order of the plurality of registered coordinates and carry out the authentication based on a compared result of the orders.

109. (ORIGINAL) The storage medium as claimed in claim 105, which further comprises:

judging an end of the input of the plurality of detected coordinates when an input interval of the plurality of detected coordinates becomes longer than a predetermined interval or, the

input interval of the plurality of detected coordinates becomes longer than an average value of the input interval.

110. (CURRENTLY AMENDED) The storage medium as claimed in claim 105, wherein said specifying member is placed in a specified region on a-the touch sensor.

111. (ORIGINAL) The storage medium as claimed in claim 107, wherein the holes or openings, cutouts or marks of said member are provided at arbitrary positions.

112. (CURRENTLY AMENDED) The storage medium as claimed in claim 105, wherein said specifying member is placed in a specified region which is arbitrarily movable on a-the touch sensor.

113. (ORIGINAL) The storage medium as claimed in claim 105, which further comprises:

registering user levels and a manager level which is common to all of the user levels, with respect to the plurality of registered coordinates, registered coordinate patterns or registered code values.

114. (ORIGINAL) The storage medium as claimed in claim 105, wherein said comparing obtains the plurality of registered coordinates from positions and registered patterns specified by one or more arbitrary ones of the detected coordinates.

115. (CURRENTLY AMENDED) The storage medium as claimed in claim 105, wherein said detecting virtually sets a keyboard at a position indicated by one or a plurality of arbitrary inputs made from a touch sensor via the specifying member which is placed on the touch sensor and specifies the plurality of discontinuous different coordinates, and detects a code corresponding to each key located at a position where the one or plurality of arbitrary inputs are made based on the virtually set keyboard, and said comparing compares each detected code with registered codes.

116. (ORIGINAL) The storage medium as claimed in claim 105, wherein said detecting detects resistances corresponding to the coordinates input from a resistor layer type

touch sensor via the specifying member, and said comparing compares the plurality of detected coordinates and the registered coordinates by comparing the detected resistances and registered resistances.

117. (ORIGINAL) The storage medium as claimed in claim 105, wherein a touch sensor is provided in a display unit of the computer.

118. (CURRENTLY AMENDED) An authentication apparatus comprising:
a touch sensor detecting configured to detect a plurality of coordinates, input via a specifying member which is placed on the touch sensor and specifies a plurality of discontinuous different coordinates;
a comparing unit comparing configured to compare an order of the plurality of detected coordinates and an order of a plurality of registered coordinates and outputting to output a compared result of the orders; and
an authentication unit carrying configured to carry out an authentication based on the compared result.

119. (CURRENTLY AMENDED) A user authentication method comprising:
~~a detecting step~~-detecting a plurality of coordinates, input via a specifying member which is placed on a touch sensor and specifies a plurality of discontinuous different coordinates;
a comparing step-comparing an order of the plurality of detected coordinates and an order of a plurality of registered coordinates and outputting a compared result of the orders; and
an authentication step-carrying out an authentication based on the compared result.

120. (CURRENTLY AMENDED) A computer readable storage medium storing a program to make a computer perform an authentication, by:
detecting a plurality of coordinates, input via a specifying member which is placed on a touch sensor and specifies a plurality of discontinuous different coordinates;
comparing an order of the plurality of detected coordinates and an order of a plurality of registered coordinates and outputting a compared result of the orders; and
authenticating based on a compared result.

121. (CURRENTLY AMENDED) An authentication apparatus, comprising:

a detecting unit detecting-configured to detect a plurality of coordinates, input from a touch sensor, via a specifying member which is placed on the touch sensor and specifies a plurality of discontinuous different coordinates;

a comparing unit comparing-configured to compare the plurality of detected coordinates and a plurality of registered coordinates and outputting-to output a compared result; and

an authentication unit carrying-configured to carry out an authentication based on the compared result.

122. (CURRENTLY AMENDED) An authentication apparatus comprising:

a detecting unit detecting-configured to detect a plurality of coordinates, input from a touch sensor by a pointing device, via a specifying member which is placed on the touch sensor and specifies a plurality of discontinuous different coordinates;

a comparing unit comparing-configured to compare the plurality of the detected coordinates and a plurality of registered coordinates and outputting-to output a compared result; and

an authentication unit carrying-configured to carry out an authentication based on the compared result.

123. (ORIGINAL) The authentication apparatus as claimed in claim 121, wherein said specifying member specifies the plurality of discontinuous different coordinates by a plurality of discontinuous holes or openings, cutouts or marks.

124. (ORIGINAL) The authentication apparatus as claimed in claim 122, wherein said specifying member specifies the plurality of discontinuous different coordinates by a plurality of discontinuous holes or openings, cutouts or marks.

125. (CURRENTLY AMENDED) An authentication apparatus, comprising:

a detecting unit detecting-configured to detect a plurality of coordinates, input from a touch sensor, via a specifying member which is placed on the touch sensor and specifies a plurality of discontinuous different coordinates;

a comparing unit comparing-configured to compare an order of the plurality of detected coordinates and an order of a plurality of registered coordinates and outputting-to output a compared result of the orders; and

an authentication unit ~~carrying-configured to carry~~ out an authentication based on the compared result.

126. (ORIGINAL) The authentication apparatus as claimed in claim 121, which further comprises:

a unit judging an end of the input of the plurality of detected coordinates when an input interval of the plurality of detected coordinates becomes longer than a predetermined interval or, the input interval of the plurality of detected coordinates becomes longer than an average value of the input interval.

127. (ORIGINAL) The authentication apparatus as claimed in claim 121, wherein said detecting unit virtually sets a keyboard at a position indicated by one or a plurality of arbitrary inputs made from the touch sensor via the specifying member which is placed on the touch sensor and specifies the plurality of discontinuous different coordinates, and detects a code corresponding to each key located at a position where the one or plurality of arbitrary inputs are made based on the virtually set keyboard, and said comparing unit compares each detected code with registered codes.

128. (ORIGINAL) The authentication apparatus as claimed in claim 121, wherein said touch sensor is provided in a display unit.

129. (CURRENTLY AMENDED) An authentication apparatus comprising:
a specifying member ~~which-specifies~~configured to specify a plurality of discontinuous different coordinates;
a touch sensor ~~detecting~~configured to detect a plurality of coordinates, input via said specifying member is placed on the touch sensor;
a comparing unit ~~comparing~~configured to compare the plurality of the detected coordinates and a plurality of registered coordinates and ~~outputting~~to output a compared result; and
an authentication unit ~~carrying~~configured to carry out an authentication based on the compared result.

130. (ORIGINAL) The authentication apparatus as claimed in claim 76, which further

comprises;

a pointing member, and
said touch sensor detects coordinates input by said pointing device via said specifying member.

131. (CURRENTLY AMENDED) The authentication apparatus as claimed in claim 130, wherein said pointing device comprises a pen or a stylus.

132. (ORIGINAL) The authentication apparatus as claimed in claim 77, wherein said pointing device by which said plurality of discontinuous different coordinates are input comprises a pen or a stylus.

133. (ORIGINAL) The user authentication method as claimed in claim 89, wherein said pointing device by which said plurality of discontinuous different coordinates are input comprises a pen or a stylus.

134. (ORIGINAL) The storage medium as claimed in claim 106, wherein said pointing device by which said plurality of discontinuous different coordinates are input comprises a pen or a stylus.

135. (ORIGINAL) The authentication apparatus as claimed in claim 122, wherein said pointing device by which said plurality of discontinuous different coordinates are input comprises a pen or a stylus.

136. (CURRENTLY AMENDED) An authentication apparatus, comprising:
a detecting unit detecting-configured to detect a plurality of coordinates, input from a coordinate detector, via a specifying member which is independent of said detecting unit, said specifying member being placed on said coordinate detector and specifies-specifying a plurality of discontinuous different coordinates;
a comparing unit comparing-configured to compare the plurality of the detected coordinates and a plurality of registered coordinates and outputting-to output a compared result; and
an authentication unit carrying-configured to carry out an authentication based on the

compared result.

137. (CURRENTLY AMENDED) An authentication apparatus comprising:
a detecting unit detecting-configured to detect a plurality of coordinates, input from a coordinate detector by a pen, via a specifying member which is placed on the coordinate detector, said specifying member being independent of said detecting unit and specifies specifying a plurality of discontinuous different coordinates;
a comparing unit comparing-configured to compare the plurality of the detected coordinates and a plurality of registered coordinates and outputting-to output a compared result; and
an authentication unit carrying-configured to carry out an authentication based on the compared result.

138. (CURRENTLY AMENDED) A user authentication method comprising:
~~a detecting step~~ detecting a plurality of coordinates, input from a coordinate detector, via a specifying member which is placed on the coordinate detector, said specifying member being independent of a detecting unit and specifies specifying a plurality of discontinuous different coordinates;
~~a comparing step~~ comparing the plurality of the detected coordinates and a plurality of registered coordinates and outputting a compared result; and
~~an authenticate on step~~ carrying out an authentication based on the compared result.

139. (CURRENTLY AMENDED) A user authentication method comprising:
~~a detecting step~~ detecting a plurality of coordinates, input from a coordinate detector by a pen, via a specifying member which is placed on the coordinate detector, said specifying member being independent of a detecting unit and specifies specifying a plurality of discontinuous different coordinates;
~~a comparing step~~ comparing the plurality of the detected coordinates and a plurality of registered coordinates and outputting a compared; and
~~an authentication step~~ carrying out an authentication based on the compared result.

140. (CURRENTLY AMENDED) A computer readable storage medium storing a program to make a computer perform an authentication, comprising:

detecting a plurality of coordinates, input from a coordinate detector, via a specifying member which is placed on the coordinate detector, said specifying member being independent of said detecting means and specifies-specifying a plurality of discontinuous different coordinates;

comparing the plurality of the detected coordinates and a plurality of registered coordinates and outputting a compared result; and

authenticating based on the compared result.

141. (CURRENTLY AMENDED) A computer readable storage medium storing a program to make a computer perform an authentication, comprising:

detecting a plurality of coordinates, input from a coordinate detector by a pen, via a specifying member which is placed on the coordinate detector, said specifying member being independent of said detecting unit and specifies-specifying a plurality of discontinuous different coordinates;

comparing the plurality of the detected coordinates and a plurality of registered coordinate and outputting a compared result; and

authenticating based on the compared result.

142. (CURRENTLY AMENDED) An authentication apparatus, comprising:

a touch sensor detecting coordinates, input via a specifying member, which is placed on the touch sensor and specifies a plurality of discontinuous different coordinates; and

a processing unit determining a relationship between the plurality of detected coordinates and a plurality of registered coordinates.

143. (CURRENTLY AMENDED) The authentication apparatus as set forth in claim 142, wherein said processing unit further comprises:

a comparing unit comparing-configured to compare the plurality of detected coordinates and the plurality of registered coordinates and outputting-to output a compared result, and

an authenticating unit authenticating-configured to authenticate based on the compared result.

144. (CURRENTLY AMENDED) The authentication apparatus as set forth in claim 142, wherein said processing unit further comprises:

a comparing unit comparing-configured to compare an order of the plurality of detected coordinates and an order of the plurality of registered coordinates and outputting-to output a compared result of the orders, and

an authenticating unit authenticating-configured to authenticate based on the compared result.

145. (CURRENTLY AMENDED) An authentication method, comprising:

a detecting step-detecting coordinates, input via a specifying member, which is placed on a touch sensor and specifies a plurality of discontinuous different coordinates; and

a determining step-determining a relationship between the plurality of detected coordinates and a plurality of registered coordinates.

146. (CURRENTLY AMENDED) The authentication method as set forth in claim 145, wherein said determining step-further comprises:

comparing the plurality of detected coordinates and the plurality of registered coordinates and outputting a compared result, and

authenticating based on the compared result.

147. (CURRENTLY AMENDED) The authentication method as set forth in claim 145, wherein said determining step-further comprises:

comparing an order of the plurality of detected coordinates and an order of the plurality of registered coordinates and outputting a compared result of the orders, and

authenticating based on the compared result.

148. (CURRENTLY AMENDED) A computer readable storage medium storing a program to make a computer perform an authentication by:

detecting a plurality of coordinates, input via a specifying member which is placed on a touch sensor and specifies a plurality of discontinuous different coordinates; and

determining a relationship between the plurality of detected coordinates and a plurality of registered coordinates.

149. (ORIGINAL) The storage medium as claimed in claim 148, wherein said determining further comprises:

comparing the plurality of detected coordinates and the plurality of registered coordinates and outputting a compared result, and
authenticating based on the compared result.

DV
150. (ORIGINAL) The storage medium as claimed in claim 148, wherein said determining further comprises:

comparing an order of the plurality of detected coordinates and an order of the plurality of registered coordinates and outputting a compared result of the orders, and authenticating based on the compared result.
